Remarks

Claims 1-24 are pending.

§ 103 Rejections

Claims 1-5, 12-20, and 23-24 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Welke et al. (EP 1026218 A1) in view of Pike (US 6,352,948) and Arakawa et al. (JP 57143380).

In part, the present invention provides a structural adhesive layer activatable upon exposure to actinic radiation. The structural adhesive layer comprises (a) a layer of adhesive material, and (b) at least one web of fibers completely embedded within outer surfaces of the layer of adhesive material.

The adhesive material is a mixture of:

(i) about 20 to about 80 weight percent of one or more epoxy resins;

(ii) about 20 to about 50 weight percent of one or more resins selected from polyester resins, ethyl vinyl acetate resins, and acrylate resins;

(iii) up to about 30 weight percent of one or more hydroxy-containing compounds;

(iv) up to about 5 weight percent of one or more photoinitiators; and

(v) up to about 50 weight percent of one or more additives; wherein all weight percentages are based on a total weight of the mixture.

The at least one web of fibers has a basis weight of less than about 30 grams per square meter, an air permeability value of more than about 600 cfm/ft^2 (3.04 m^3/m^2/sec) as measured by ASTM D737-75 or ASTM D737-80, a light permeability value of more than about 10% as measured by Light Permeability Test LPT, and comprises fibers having an average fiber diameter of less than about 20 microns. (See, e.g., independent claims 1, 17 and 19.)

According to the Patent Office, Welke is directed to a UV-curable polyester/epoxy adhesive tape that is capable of being cured upon exposure to actinic radiation. (See, Office Action mailed 12/18/2003, hereinafter "OA," ¶ 3.) The Patent Office acknowledges that Welke fails to teach the following elements of the present invention: (1) a web comprising fibers

having an average fiber diameter of less than about 20 microns; (2) at least one web of fibers completely embedded within outer surfaces of the layer of adhesive material; and (3) a web of fibers having a basis weight of less than about 30 grams per square meter, an air permeability value of more than 600 cfm/ft^2 as measured by ASTM D737-75 or ASTM D737-80, and a light permeability value of more than about 10% as measured by Light Permeability Test LPT. (See, OA, ¶ 3, pages 4-6.)

In order to address these deficiencies in Welke, the Patent Office seeks to combine Welke with Pike and Arakawa. Applicants respectfully submit that the Patent Office has used Applicants' specification and impermissible hindsight as the motivation to combine these references, and respectfully traverses.

To establish a prima facie case of obviousness there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings. Also, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must be found in the prior art, not in applicant's disclosure. (MPEP § 2143.) When applying 35 U.S.C. § 103, the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. (MPEP § 2141.)

(1) A web comprising fibers having an average fiber diameter of less than about 20 microns.

At best, Welke describes supported pressure-sensitive adhesive tapes comprising at least one backing, wherein the backing may be a non-woven. (Paragraph [0063].) As acknowledged by the Patent Office, details of the non-woven substrate are absent in Welke. According to the Patent Office, it would have been obvious and necessary to look to the prior art to provide these details. (See, OA ¶ 3, page 5.) Assuming such a look to the prior art were necessary, Applicants respectfully traverse the Patent Office's proffered motivation to look to Pike for a nonwoven web.

The Patent Office asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the non-woven fabric comprising polyester fibers as suggested by Pike as the substrate in the invention of Welke, motivated by the expectation of successfully practicing the invention of Welke and the desire to have a light-weight, breathable substrate." (OA, ¶ 3, page 5.) However, the Patent Office has failed to show how Welke describes, teaches or suggests a desire to have a light-weight breathable substrate.

First, the tapes of Welke are asserted to be useful for applications such as, for example, bonding in the transportation, automotive, construction or electronic industries. (Paragraph [0072].) Applicants respectfully submit that the Patent Office has failed to explain how the references themselves or the knowledge of one of ordinary skill in the art would motivate one to seek "light-weight, breathable substrates" for these applications, or any application described, taught or suggested by Welke.

Second, the nonwoven web of Pike is bonded to a barrier film to make barrier laminates. (Col. 2, lines 11-14.) The barrier webs of Pike are directed toward applications where the tactile quality of softness of the nonwoven laminate is desirably one pleasing to the touch, e.g., personal care articles, and surgical gowns and drapes. (See, col. 1, lines 17-35.) Applicants respectfully submit that the Patent Office has failed explain how the references themselves or the knowledge of one of ordinary skill in the art would lead one to reasonably expect that combining the adhesive of Welke with the nonwoven web of Pike, absent the barrier film, would result in a product useful for the applications of Welke or Pike

(2) At least one web of fibers completely embedded within outer surfaces of the layer of adhesive material.

Assuming, *arguendo*, that the above described deficiencies could be overcome, the Patent Office acknowledges that neither Welke nor Pike describes a web of fibers completely within the layer of adhesive. (OA, ¶ 3, page 5.) The Patent Office asserts that it would have been obvious to one of ordinary skill in the art to fully embed, or impregnate, the web material as suggested by Arakawa rather than partially embedding the material as implied by Welke, motivated by the desire to improve the strength and adherence properties of the tape. (OA, ¶ 3, page 6.)

First, as acknowledged by the Patent Office, such a combination would be contrary to the express teaching of Welke, which, at best, describes nonwovens as a potential backing for an adhesive tape. (See, paragraph [0063].)

Second, embedding the nonwoven of Pike in the adhesive of Welke would destroy the functionality of the nonwoven, as described by Pike. Specifically, the nonwovens of Pike are asserted to provide qualities of softness. (See, col. 1, line 28.) Furthermore, although Pike describes bonding the nonwoven to a barrier film with adhesive, Pike states that in order to improve drape it may often be desirable to apply the adhesive in pattern as opposed to application across the entire surface of one or more layers of the laminate. (Col. 9, lines 26-36.) Applicants respectfully submit that Pike, taken as a whole, teaches away from embedding its nonwoven in an adhesive.

Third, the Patent Office has failed to show how the references themselves or the knowledge of one of ordinary skill in the art describe, teach or suggest that replacing the backing of Welke with the embedded web of Arakawa would result in the purported improvements in the strength and adherence properties of the tape. Furthermore, the Patent Office has failed to show how the references themselves or the knowledge of one of ordinary skill in the art describe, teach or suggest that embedding the specific webs of Pike would achieve those results.

(3) Additional properties of the web.

Applicants believe the arguments above are more than adequate to overcome the rejection. Applicants respectfully reserve the right to respond to the Patent Office's arguments concerning the other deficiencies in the cited combination of references, when and if it becomes necessary.

In summary, Applicants respectfully submit that the references themselves fail to provide the proper motivation to combine the elements selected from them by the Patent Office. The mere fact that the references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. (MPEP § 2143.01.) In the present case, the Patent Office has failed to provide the proper motivation to combine the adhesive of Welke with the nonwoven of Pike to obtain products

useful for either Welke or Pike. In addition, the Patent Office has failed to provide the proper motivation for the further combination with Arakawa. Finally, such a combination is both contrary to the teaching of Welke, and would destroy the purported benefits of using the nonwovens of Pike.

For at least these reasons, the rejection of claims 1, 17, and 19 under 35 USC § 103(a) as being unpatentable over Welke et al., in view of Pike and Arakawa et al. is unwarranted and should be withdrawn.

Claims 2-5 and 12-16 each depend from and add additional features to claim 1. Claim 18 depends from claim 17 and adds additional features thereto. Claims 20, and 23-24 each depend from claim 19 and add additional features thereto. Claims 1, 17 and 19 are patentable for the reasons given above. Thus, claims 2-5, 12-20, and 23-24 are likewise patentable.

In summary, the rejection of claims 1-5, 12-20, and 23-24 under 35 USC § 103 (a) as being unpatentable over Welke et al., in view of Pike and Arakawa et al. is unwarranted and should be withdrawn.

Claims 1, 6-8, 19 and 21 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Willett (WO 99/57197) in view of Pike (US 6,352,948) and Pachl et al. (US 6,174,932).

According to the Patent Office, Willett describes a curable composition formed by mixing epoxy resin, ethylene-vinyl acetate copolymer and polyester resin. The Patent Office further asserts that Willett describes that the curable composition may be applied to a wide variety of substrates including plastics, metals, ceramics, glass and cellulosic materials. (OA ¶ 4, page 8.) The Patent Office then states that Willett is silent as to the details of his substrate, and concludes that it would have been obvious and necessary for a skilled artisan to look to the prior art to provide the necessary details for the non-woven substrate. (OA, ¶ 4, page 9.)

First, Applicants respectfully traverse the assertion that Willett is silent as to the details of his substrate. As acknowledged by the Patent Office, Willett provides a list of suggested substrates at page 18, lines 20-24. (See, OA, ¶ 4, page 8.)

Second, Applicants respectfully submit that the Patent Office has failed to show how Willett describes, teaches or suggests non-wovens, as they are not among the list of materials

cited by the Patent Office. Thus, Applicants respectfully traverse the assertion that it would have been obvious to search the art for details of a nonwoven.

Third, the Patent Office has failed to show how Willett describes, teaches or suggests a desire to have a light-weight, breathable substrate. For at least this reason, Applicants traverse the Patent Office's proffered motivation to combine these references, i.e., that one motivated to successfully practice the invention of Willett would also be motivated by the desire to have a light-weight, breathable substrate. Willett is directed toward energy cured sealant compositions. (Page 1, lines 1-10.) In contrast, Pike is directed toward multilayer laminates having tactile qualities of softness. (Col. 1, lines 15-35; and col. 2, lines 11-14.)

In summary, Applicants respectfully submit that the Patent Office has failed to provide the proper motivation and reasonable expectation of success for combining the adhesive of Willett with the nonwoven of Pike to obtain products useful for either Willett or Pike.

Assuming, *arguendo*, these deficiencies could be overcome, the Patent Office has failed to show how either Willett or Pike describe, teach or suggest completely embedding the web of Pike in the adhesive of Willett, as required by the present invention. (See, e.g., claim 1.) As discussed above, doing so would destroy the stated utility of the non-woven webs of Pike. Thus, the proposed combination fails to teach all of the elements of the claimed invention.

The Patent Office further combines Pachl for its description of certain phenoxy containing compounds. (OA ¶ 4, pages 10-11.) Applicants respectfully submit that Pachl fails to address the deficiencies of Willet and Pike, as described above.

The Patent Office acknowledged further deficiencies in the combination of Willett with Pike and Pachl. (See, OA, ¶ 4.) Applicants believe the arguments above are more than adequate to overcome the rejection (e.g., they demonstrate that the combined references fail to teach all elements of the claimed invention). Applicants respectfully reserve the right to respond to the Patent Office's arguments concerning the further deficiencies of the cited combination of references, when and if it becomes necessary.

In summary, Applicants respectfully submit that the Patent Office failed in its burden to establish a *prima facie* case of obvious. First, the Patent Office failed to show how the references themselves provide the requisite motivation to combine the references, and the reasonable

expectation of success of such a combination. Second, even if combined, the references fail to teach all elements of the claimed invention (e.g., a completely embedded web).

For at least these reasons, the rejection of claims 1, 6-8, 19 and 21 under 35 USC § 103(a) as purportedly being unpatentable over Willett, in view of Pike and Pachl et al. is unwarranted and should be withdrawn.

Claims 1, 9-11, 19 and 22 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over Nakasuga et al. (US 6,376,070) in view of Willett et al. (US 6,136,398) and Pike et al. (US 6,352,948).

According to the Patent Office, Nakasuga is directed to a sheet-form, curable pressure sensitive adhesive that may be placed on at least one surface of a substrate such as rayon or cellulosic non-woven fabrics or sheets made of synthetic resins such as polyethylene, polyester, polypropylene and polystyrene. (OA, ¶ 5, pages 12 and 14.) The Patent Office further asserts that Nakasuga is silent as to the details of the substrate and it would have been obvious and necessary for a skilled artisan to look to the prior art to provide the details for a nonwoven substrate.

First, Applicants respectfully traverse the assertion that Nakasuga is silent as to the details of his substrate. As acknowledged by the Patent Office, Nakasuga provides a list of suggested substrates, including specific materials for non-wovens at column 11, lines 50-67. (See, OA, ¶ 5, page 14.) Thus, Applicants respectfully traverse the assertion that it would have been obvious to search the art for details of a nonwoven.

Second, the Patent Office has failed to show how Nakasuga describes, teaches or suggests a desire to have a light-weight, breathable substrate. For at least this reason, Applicants traverse the Patent Office's proffered motivation to combine these references, i.e., that one motivated to successfully practice the invention of Nakasuga would also be motivated by the desire to have a light-weight, breathable substrate. Nakasuga is directed toward sheet form, curable pressure sensitive adhesives for joining substrates together. (Page 1, lines 1-12.) In contrast, Pike is directed toward multilayer laminates having tactile qualities of softness. (Col. 1, lines 15-35; and col. 2, lines 11-14.)

In summary, Applicants respectfully submit that the Patent Office has failed to provide the proper motivation and reasonable expectation of success for combining the adhesive of Nakasuga with the nonwoven of Pike to obtain products useful for either Nakasuga or Pike.

The Patent Office further combines Willett for its description of certain hydroxyl containing compounds. (OA ¶ 5, pages 14.) The deficiencies of Willett were discussed above. Applicants respectfully submit that Willett fails to address the deficiencies of Nakasuga and Pike, as described above.

Assuming, *arguendo*, these deficiencies could be overcome, the Patent Office has failed to show how the combination of Nakasuga, Willett and Pike describe, teach or suggest completely embedding the web of Pike in the adhesive of Willett. As discussed above, doing so would destroy the stated utility of the non-woven webs of Pike. Thus, the proposed combination fails to teach all of the elements of the claimed invention.

The Patent Office acknowledged further deficiencies in the combination of Nakasuga with Willett and pike. (See, OA, ¶ 5.) Applicants believe the arguments above are more than adequate to overcome the rejection (e.g., they demonstrate that the combined references fail to teach all elements of the claimed invention). Applicants respectfully reserve the right to respond the Patent Office's arguments concerning these further deficiencies in the cited combination of references, when and if it becomes necessary.

In summary, Applicants respectfully submit that the Patent Office failed in its burden to establish a *prima facie* case of obvious. First, the Patent Office failed to show how the references themselves provide the requisite motivation to combine the references, and the reasonable expectation of success of such a combination. Second, even if combined, the references fail to teach all elements of the claimed invention (e.g., a completely embedded web).

For at least these reasons, the rejection of claims 1, 9-11, 19 and 22 under 35 U.S.C. § 103(a) as purportedly being unpatentable over Nakasuga et al., in view of Willett et al. and Pike et al. is unwarranted and should be withdrawn.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested.

Allowance of claims 1-24 at an early date is solicited.

Respectfully submitted,

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